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Quadrennial Roles and Missions Review Report

Quadrennial Roles and Missions

Review Report

January, 2009

Top Row
#1 A fully armed MQ-9 Reaper taxis before a mission in Afghanistan.
U.S. Air Force photo by Staff Sergeant Brian Ferguson

#2 U.S. Coast Guard Cutter Bainbridge Island stands watch over the Statue of Liberty in New York Harbor.
U.S. Coast Guard photo by Petty Officer Mike Lutz

#3 An Afghan engineer talks with a member of the Nangarhar Provincial Reconstruction Team in the Nangarhar province of Afghanistan.
Photo by Staff Sergeant Joshua T. Jasper, U.S. Air Force

Second Row
#4 Wideband Global SATCOM satellite.
Air Force Image

#5 SEALs in from the water.
U.S. Navy SEALs Photo

Third Row
#6 The first Joint Cargo Aircraft presented to the U.S. Army.
L3, Alenia North America, Global Military Aircraft Systems

#7 Operations center in Qatar.
U.S. Air Force photo by SrA Brian Ferguson

#8 Soldiers in their M1A1 Abrams tank in Iraq.
Photo by Pvt. Brandi Marshall

Bottom Row
#9 Marines conduct a security patrol in Husaybah, Iraq.
AP Photo/ U.S Marine Corps, Cpl Michael R McMaugh, 1st Marine Division Combat Camera, HO

#10 A B-52 Stratofortress flies past the USS Nimitz with two U.S. Navy F/A-18 Hornets.
U.S. Navy photo
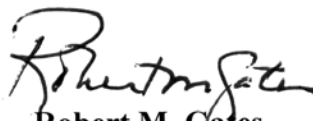
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Foreword

FOREWORD

Since September 2001, our Nation has been engaged in a multi-theater, long-term conflict against militant extremists who seek to erode the strength and will of the United States, our partners, and our allies through irregular and asymmetric means. As the Department of Defense continues to engage in ongoing operations, we must also prepare for our future challenges by learning from the past, building on the present, and taking advantage of opportunities to increase the effectiveness and efficiency of our institution. During the inaugural Quadrennial Roles and Missions Review, we have leveraged previous defense reviews and lessons from recent operations to determine how we should change to better meet our institutional responsibilities and improve support to our national security partners.

In accordance with section 941 of the National Defense Authorization Act for Fiscal Year 2008, this report identifies the Department's Core Mission Areas and Core Competencies. Additionally, this report describes how the Department's civilian and military leadership reviewed the rapidly-evolving roles, missions, and capabilities associated with irregular warfare, cyberspace operations, unmanned aircraft systems, and intratheater airlift. Together, we have concluded the Department must improve how we organize, train, and equip our forces for these areas.

Of course, the Department of Defense cannot address our Nation's complex security challenges alone. One of the most important lessons from recent operations is that military success does not equate to victory. As a result, during the Quadrennial Roles and Missions Review we considered opportunities that will help strike a better balance between our Nation's hard and soft power capabilities. The Quadrennial Roles and Missions Review concludes we must improve our soft power: our national ability to promote economic development, institution-building and the rule of law, internal reconciliation, good governance, training and equipping indigenous military and police forces, strategic communications, and more. Doing so requires exploring whole-of-government approaches for meeting complex security challenges.

While the Quadrennial Roles and Missions Review lays a foundation for understanding the Department's roles and responsibilities in today's complex security environment, there is still much work to be done. As we move toward the Quadrennial Defense Review, we must continue initiatives that establish the right balance between winning today's wars and preventing tomorrow's conflicts while improving our whole of government ability to promote stability and security at home and aboard.

Robert M. Gates
Secretary of Defense

I. INTRODUCTION

Quadrennial Roles and Missions Review Objectives. The Quadrennial Roles and Missions Review (QRM) offered a unique opportunity for the Defense Department to further our strategic priorities by assessing responsibilities of individual components and evaluating improvements to the way we do business across our enterprise. Completed toward the end of the 2006 QDR implementation cycle, the 2009 QRM capitalized on changes the Department has made to its responsibilities, processes, and capabilities since 2006 and direction for the future established in our latest strategic guidance documents, including the 2008 *National Defense Strategy*.

From the onset of the Review, teams of senior civilian and military leaders from the Military Services, Joint Staff, Combatant Commands, and Office of the Secretary of Defense worked together to develop a framework that defines and links the Department's Core Mission Areas with its Core Competencies and Functions of the Armed Forces. Additionally, teams of civilian and military experts worked together to assess high-interest issue areas and propose actions to achieve the Department's primary objectives for this inaugural QRM:

- Increase synergy across the Department's Components.

- Improve the effectiveness of joint and interagency operations.

- Ensure the Department continues to efficiently invest the Nation's defense resources to meet the asymmetric challenges of the 21st Century.

This approach stems from our understanding that dealing with long-term security challenges requires the Department to operate with unity, agility, creativity, and in concert with our partners across the U.S. Government.

QRM Report Overview. Section II of this report describes a framework developed by the Department for assessing potential future roles and missions changes. This framework, which integrates traditional missions with new and emerging military activities, is the first of its kind developed during a defense review. Section III defines the Department's Core Mission Areas and Core Competencies, as required by section 941 of the 2008 National Defense Authorization Act. Section IV summarizes the Department's insights and initiatives for four specific roles and missions focus areas: Irregular Warfare; Cyberspace; Intratheater Airlift; and Unmanned Air Systems / Intelligence, Surveillance, Reconnaissance. Section V addresses the need for increased emphasis on effective interagency operations to address complex national security challenges.

During the QRM, the cohesive efforts of our civilian and military leaders and their desire to address security challenges from a Departmental perspective provided a solid foundation for continued cooperation in these and other roles and missions issue areas. While this report captures 2009 QRM results, they should not be viewed as the final solution for roles and missions challenges the Department and its partners face in today's dynamic security environment. Continued progress will depend on the capacity of the Department and its partners to take advantage of real-word lessons learned and our ability to work together to better integrate all instruments of national power.

II. ROLES AND MISSIONS FRAMEWORK

The framework in Figure 1 summarizes results of the Department's efforts to define its Core Mission Areas and Core Competencies. As the framework illustrates, Core Mission Areas and Core Competencies provide guidance to the Services and U.S. Special Operations Command on the appropriate mix and scope of roles and functions to meet priorities of the *National Defense Strategy* and *National Military Strategy*:

Figure 1: Department of Defense Framework for the QRM
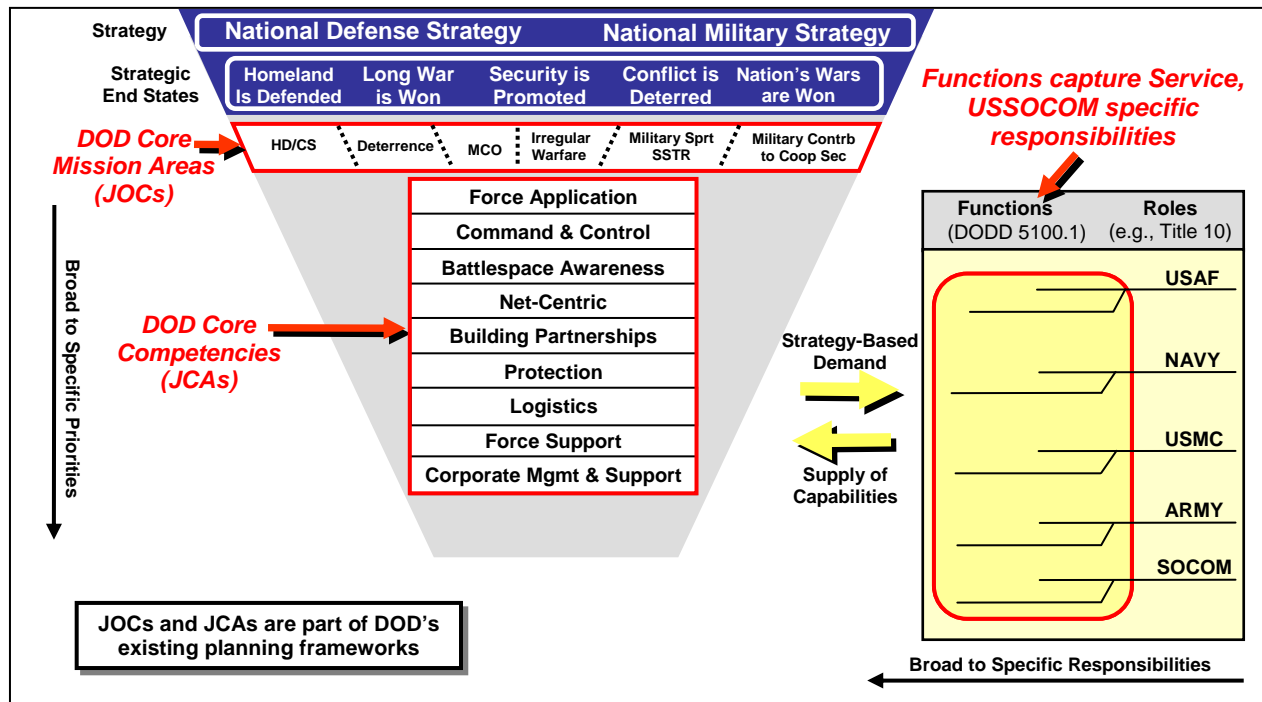
Core Mission Areas are broad Department of Defense military activities required to achieve strategic objectives of the *National Defense Strategy* and *National Military Strategy*. A Core Mission Area is a mission for which the Department is uniquely responsible, provides the preponderance of U.S. Government capabilities, or is the U.S. Government lead for achieving end states defined in national strategy documents.

- Each of the Department's Core Mission Areas is underpinned by a Joint Operating Concept (see Section III) that identifies desired effects necessary to achieve operational objectives, essential capabilities to achieve these objectives, and relevant conditions under which capabilities must be applied. Joint Operating Concepts (JOCs) are a visualization of future operations. They describe how a commander, using military art and science, might employ capabilities necessary to meet future military challenges. In practice, JOCs establish context for the Department's force development planning and resourcing activities. This helps the Department identify military problems and develop innovative solutions that go beyond merely improving the ability to execute missions under existing standards of performance.

o Although JOCs underpin the Department's Core Mission Areas, they are not entirely Department-centric. For example, the Department informally coordinates with the Department of State and other agencies on concepts for irregular warfare, cooperative security, and stability operations. As we continue to evolve JOCs, there will be additional opportunities for interagency cooperation.

Core Competencies are groupings of functionally-organized capabilities associated with the performance of, or support for, a Department of Defense Core Mission Area. The Department's Components perform tasks and activities that supply these functionally-organized capabilities.

- The QRM determined the Department's Core Competencies correspond to the nine Joint Capability Areas (see Section III) established following the 2006 QDR. Joint Capability Areas (JCAs) are groupings of related capabilities that support strategic decision-making, capability portfolio management, and joint analyses of capability gaps, excesses, and major tradeoff opportunities. JCAs also provide a common capabilities language for use across the Department's activities and processes.

Functions are the appropriate or assigned duties, responsibilities, missions, or tasks of an individual, office, or organization as defined in the National Security Act of 1947, including responsibilities of the Armed Forces as amended. The term "function" includes purpose, powers, and duties. Specific Functions of the Services and U.S. Special Operations Command are captured in Department of Defense Directives.

Roles are the broad and enduring purposes for which the Services and U. S. Special Operations Command were established by law.

III. DEPARTMENT OF DEFENSE CORE MISSION AREAS, CORE COMPETENCIES, AND FUNCTIONS

A. Core Mission Areas

The QRM defined five key attributes for the Department's Core Mission Areas: they represent relatively enduring missions; they are necessary for achieving strategic end states derived from the 2008 *National Defense Strategy;* they constitute a broad military activity; they describe a unique Department of Defense capability and capacity; or they identify a mission for which the Defense Department is the U.S. Government lead and/or provides the preponderance of U.S. Government capabilities. In compliance with section 941 of the 2008 National Defense Authorization Act, the Department has established six Core Mission Areas:

1. **Homeland Defense and Civil Support (HD/CS)** operations help ensure the integrity and security of the homeland by detecting, deterring, preventing, or, if necessary, defeating threats and aggression against the United States as early and as far from its borders as possible so as to minimize their effects on U.S. society and interests. The Department also may be directed to assist civilian authorities in order to save lives, protect property, enhance public health and safety, or to lessen or avert the threat of a catastrophe. The Department provides many unique capabilities that can be used to mitigate and manage the consequences of natural and man-made disasters and must be prepared to provide support to federal, state, and local authorities.

Two UH-60 Black Hawk helicopters from 2nd Battalion, 227th Aviation Regiment, 1st Air Cavalry Brigade, 1st Cavalry Division, fly the commanding general of U.S. Northern Command General Victor Renuart Jr. and his staff over Galveston, Texas and surrounding areas during an aerial assessment of damage left in the wake of Hurricane Ike.

Photo by Sgt. Nathan J.J. Hoskins, 1st ACB, 1st Cav. Div. Public Affairs

2. **Deterrence Operations** are integrated, systematic efforts to exercise decisive influence over adversaries' decision-making calculus in peacetime, crisis, and war to achieve deterrence.

3. **Major Combat Operations (MCOs)** are the conduct of synergistic, high-tempo actions in multiple operating domains, including cyberspace, to shatter the coherence of the adversary's plans and dispositions and render him unable or unwilling to militarily oppose the achievement of U.S. strategic objectives.

4. **Irregular Warfare** encompasses operations in which the joint force conducts protracted regional and global campaigns against state and non-state adversaries to subvert, coerce, attrite, and exhaust adversaries rather than defeat them through direct conventional military confrontation. Irregular warfare emphasizes winning the support of the relevant populations, promoting friendly political authority, and eroding adversary control, influence, and support.

5. **Military Support to Stabilization Security, Transition, and Reconstruction Operations** is assistance to severely stressed governments to avoid failure or recover
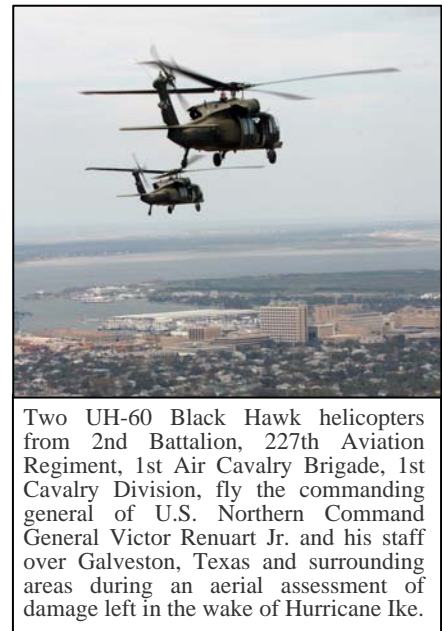
from a devastating natural disaster, or assist an emerging host nation government in building a new domestic order following internal collapse or defeat in war.

6. **Military Contribution to Cooperative Security** describes how Joint Force Commanders mobilize and sustain cooperation, working in partnership with domestic and foreign interested parties, to achieve common security goals that prevent the rise of security threats and promote constructive regional security environments.

B. Core Competencies

The Department's Core Competencies, expressed as Joint Capability Areas, establish the link between the operational perspectives of our Core Mission Areas and the Department's capabilities development processes. In practice, Joint Capability Areas translate current and future operational needs to capability priorities, and form the functional structure used to prioritize, assess, develop, and manage capabilities across all the Department's Components. In compliance with section 941 of the National Defense Authorization Act for 2008, the Department has defined nine Core Competencies:

1. **Force Application** – The ability to integrate the use of maneuver and engagement in all environments to create effects necessary to achieve mission objectives.

2. **Command and Control** – The ability to exercise authority and direction by a properly designated commander or decision maker over assigned and attached forces and resources in the accomplishment of the mission.

3. **Battlespace Awareness** – The ability to understand dispositions and intentions as well as the characteristics and conditions of the operational environment that bear on national and military decision-making.

4. **Net Centric** – The ability to provide a framework for full human and technical connectivity and interoperability that allows all Defense Department users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence, and protects information from those who should not have it.

Electronic warfare officers monitor a simulated test in the Central Control Facility (CCF) at Eglin Air Force Base, Florida. The Air Force uses the CCF to oversee electronic warfare flight testing.

U.S. Air Force photo by Capt. Carrie Kessler, 53rd Wing Public Affairs

5. **Building Partnerships** – The ability to set the conditions for interaction with partner, competitor or adversary leaders, military forces, or relevant populations by developing and presenting information and conducting activities to affect their perceptions, will, behavior, and capabilities.

6. **Protection** – The ability to prevent/mitigate adverse effects of attacks on combatant and non-combatant personnel and physical assets of the United States, our allies, and friends.

7. **Logistics** – The ability to project and sustain a logistically-ready joint force through the deliberate sharing of national and multi-national resources to effectively support operations, extend operational reach, and provide joint force commanders the freedom of action necessary to meet mission objectives.

8. **Force Support** – The ability to establish, develop, maintain and manage a mission-ready Total Force, and provide, operate, and maintain capable installation assets across the Total Force to ensure needed capabilities are available to support national security.

Marines with 1st Platoon, Echo Company, 2nd Battalion, 1st Marine Regiment conduct a security patrol in Husaybah, Iraq, during Operation Steel Curtain.

AP Photo/ U.S Marine Corps, Cpl Michael R McMaugh, 1st Marine Division Combat Camera. HO

9. **Corporate Management and Support** – The ability to provide strategic senior level, enterprise-wide leadership, direction, coordination, and oversight through a chief management officer function.

C. Integrating Core Mission Areas & Core Competencies into DOD Processes

As described in the 2006 QDR Report, the Department has expanded its use of integrated capability portfolios to balance risk and conduct strategic-level capability trade-offs. Accordingly, the Department has organized its governance structure for managing its capability portfolios around the nine Core Competencies/Joint Capability Areas. A pilot program started during the Fiscal Year 2009 budget process validated using JCAs as part of an integrated portfolio management framework. The current defense budget development cycle considered all nine JCAs, with specific program elements mapped to appropriate lead and supporting JCA portfolios. Additionally, the Department has assigned oversight responsibility for each of the JCAs to a Senate confirmed official paired with a senior military co-lead. The Core Competencies/Joint Capability Areas structure is now a significant part of the Department's requirements process. For example, the Joint Capability Integration Development System will direct all requirements documents to be associated with appropriate JCAs. As the Department fully integrates the Core Competencies/Joint Capability Areas structure, it will be able to better illustrate capability investments across the Department.

D. Functions of the Services and U.S. Special Operations Command

The QRM examined responsibilities assigned by U.S. Code and the Secretary of Defense to the Services and other Department Components. A major aspect of this assessment was a thorough review of Department of Defense Directive 5100.1, "Functions of the Department of Defense and Its Major Components." This document was modified to ensure functions are identified and assigned to appropriate organizations. These modifications stress the Department's continued emphasis on joint warfighting, and incorporate recent and emerging responsibilities in such areas as special operations and cyberspace operations.

IV. ROLES AND MISSIONS FOCUS AREAS

During the Quadrennial Roles and Missions Review, the Department of Defense assembled teams of experts to address specific roles and missions issues in the areas of Irregular Warfare; Cyberspace; Intratheater Airlift; and Unmanned Aircraft Systems / Intelligence, Surveillance, Reconnaissance.[1] The following sections capture the Department's common vision for each area and initiatives underway to increase synergy across the Department's Components; improve effectiveness of joint and interagency operations; and ensure the Department continues to efficiently invest our Nation's defense resources to meet the asymmetric challenges of the 21st Century.

A. Irregular Warfare

Executive Summary. The Department currently defines irregular warfare as a violent struggle among state and non-state actors for legitimacy and influence over the relevant populations. Irregular warfare favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities, in order to erode an adversary's power, influence, and will.[2] The Department continues to make steady progress toward incorporating irregular warfare into its force planning construct, influencing the size of the force and the capabilities needed to ensure the joint force is as effective in irregular warfare as it is in conventional warfare. Both the 2008 *National Defense Strategy* and the 2006 QDR codified this commitment to irregular warfare. The Department will continue to inculcate irregular warfare priorities into policy, doctrine, training,

> *The Department's vision is to shape the future joint force to be as effective in irregular warfare as it is in conventional warfare.*

and education at all levels, while developing and sustaining a balanced investment strategy to field needed capabilities and capacity. General Purpose Forces (GPF) and Special Operations Forces (SOF) each have roles and responsibilities for irregular warfare missions, with the force composition mix depending largely on the risk and character of the operational environment. To support maturation of our national ability to conduct irregular warfare, the Department, in collaboration with other U.S. Government departments and agencies, will explore alternatives that promote interagency cooperation, and improve the efficiency, flexibility, and responsiveness of funding lines and legislative authorities.

Irregular Warfare Challenges. Historically, the Department has focused its efforts on the ability to defeat a state adversary's conventional military forces. However, the 2006 QDR assessed that while conventional threats will remain and U.S. Armed Forces must maintain the capacity to defeat them, current and future adversaries are more likely to pose irregular and asymmetric threats. The Department therefore developed a force planning construct (Figure 2) that recognizes the need to maintain capabilities to defend the homeland and prevail in conventional campaigns while concurrently developing a mastery of irregular warfare comparable to that which our armed forces have achieved for conventional warfare. This

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[1] The Defense Department's leadership and members of the 2008 U.S. House Armed Services Committee Roles and Missions Panel identified these areas as high interest.

[2] In this definition, the term "violent" refers to the nature of the conflict and is not necessarily the prescription for a U.S. response.
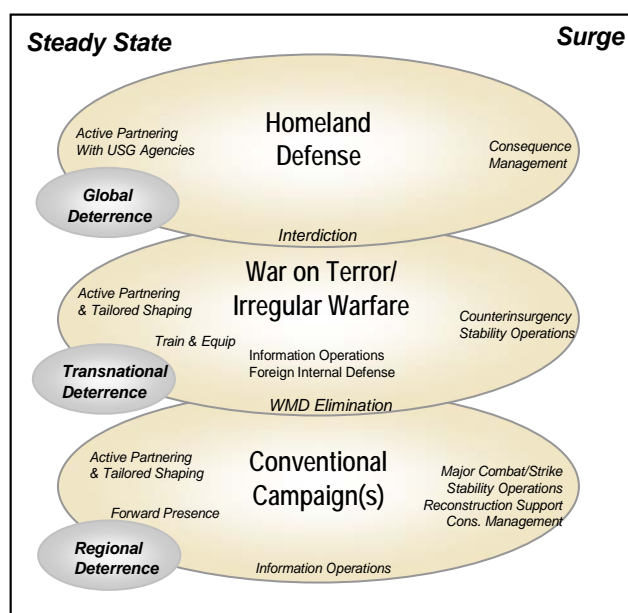
assumes added importance, especially during an era when the character of warfare is blurring and military forces are likely to engage adversaries who use hybrid warfare which simultaneously blends conventional and irregular methods. Given this likelihood, the Department must determine the most efficient and effective balance between homeland defense, irregular warfare, and conventional warfare priorities.

The primary irregular warfare activities addressed by this report – foreign internal defense, counterinsurgency, counter-terrorism, unconventional warfare, and stability operations – occur across the spectrum of irregular and conventional warfare operations. None of these activities are new to the Department of Defense. Many of the capabilities required to execute them are resident in some parts of the joint force, but may not exist in sufficient capacity to meet expected demand. In other cases, the Department needs to develop new capabilities, such as foreign language and cross-cultural communication skills, to address emerging and future challenges.

Figure 2: DoD Force Planning Construct

During the QRM, an Irregular Warfare Issue Team led by U.S. Special Operations Command and the Assistant Secretary of Defense for Special Operations/Low Intensity Conflict and Interdependent Capabilities addressed initiatives to improve effectiveness of joint operations and create opportunities for efficient investment of resources for irregular warfare. The team examined irregular warfare roles and missions across Special Operations Forces and General Purpose Forces; the balance of responsibilities across the Active and Reserve Components; identified mechanisms to further institutionalize irregular warfare across the Department; and how to better integrate defense capabilities with those of our interagency partners and allies.

Background. DOD has achieved some success in institutionalizing irregular warfare across the Department in recent years. The Department has established irregular warfare as one of its six Core Mission Areas, and completed a formal Irregular Warfare Joint Operating Concept describing how joint commanders might employ capabilities to meet future irregular warfare operational challenges. The Irregular Warfare Joint Operating Concept recognizes the protracted nature of irregular conflict and how it can occur in both steady-state and surge scenarios, just as partner capacity building can occur in both. At

Graduates of the first Ministry of Interior National Police Command Special Forces platoon perform a demonstration during their graduation ceremony at the Iraqi Police Academy in Kirkuk, Iraq. Irregular warfare increases demand for capabilities to organize, train, and equip foreign security forces.

the component level, all Services and several Combatant Commanders have established irregular warfare-related training and education centers. The Office of the Secretary of Defense has initiatives underway to institutionalize irregular warfare in the joint force, working with the Services, Joint Staff and several interagency partners. The Department is currently conducting a study of irregular warfare-relevant requirements in the steady-state, as well as in counterinsurgency and unconventional warfare surge scenarios used for defense planning. Study results will allow the Department to identify and institute additional long-term changes to address irregular warfare capabilities and capacity priorities, resulting in a force that is better trained, equipped, and educated to handle the full range of missions across the spectrum of operations.

While these efforts reflect progress, the Department acknowledges it has more to do to achieve its irregular warfare vision. Gaps still exist in institutionalizing irregular warfare concepts and capabilities needed for future joint operations, and for operating in concert with our interagency partners. The Department will continue to develop a resource investment strategy that achieves the right balance of capabilities to meet future challenges across the spectrum of operations. While more remains to be done, institutional transformation requires time and appropriate resources. With the continued support of Congress, the Department will steadily improve critical irregular warfare capabilities to meet the challenges of a rapidly evolving security environment.

Vision: Responsibilities for Irregular Warfare and Continued Institutionalization. The Department's irregular warfare vision is to equip the joint force with capabilities, doctrine, organization, training, leadership, and operating concepts needed to make it as proficient in irregular warfare as it is in conventional warfare. The Defense Department's goals for the future joint force include two main elements:

1. A Department with increased and balanced capability and capacity to address all future security challenges, including irregular warfare; and

2. A Department that can better integrate with interagency partners to leverage all elements of national power to meet national security objectives.

Decisions and Initiatives.

A 7th Special Forces Group Soldier instructs his Colombian counterparts in urban-warfare techniques. DOD will continue to institutionalize irregular warfare capabilities in SOF and General Purpose Forces.

SOF and GPF Roles and Missions for Irregular Warfare. The Department reviewed the roles and missions for SOF and GPF and concluded each has significant responsibilities for irregular warfare. As a result, the Department is continuing to define how Services develop and apply capabilities in different environments. For example, U.S. Special Operations Command, acting as the Department's joint proponent for security force assistance, is collaborating with the Chairman of the Joint Chiefs of Staff, U.S. Joint Forces Command, Services, and Geographic Combatant Commanders to develop global joint sourcing solutions that recommend the most appropriate forces for validated security force assistance requirements.

- As noted in the 2006 QDR, General Purpose Forces will continue to support and play a leading role in stability operations and counterinsurgency, and a greater role in foreign internal defense. For steady-state operations, GPF will have an increased role in training, advising, and equipping foreign security forces, deploying and engaging with foreign partner security forces, supporting civil-military teams in stability operations, and conducting integrated irregular warfare operations with SOF. To do this effectively, General Purpose Forces will need a greater degree of language and cultural instruction to train and advise indigenous forces.

- The SOF and GPF force mix for conducting future operations will largely depend on the risk and character of the operational environment, not simply by the task at hand. For example, when operational environments dictate that the joint force presence remains unobtrusive, SOF will play a leading role. General Purpose Forces will continue to play a leading role in operational environments where a large-scale presence is warranted to provide security to a population.

Balancing Active and Reserve Components for Irregular Warfare. The global, protracted nature of irregular warfare will continue to place more demands on the Department's Active Component, Reserve Component, and civilian Total Force. To address this challenge, the QRM assessed the appropriate Active/Reserve Component balance to meet future irregular warfare-related operational demand. The Department concluded that persistent presence and sustainment of irregular warfare activities require increasing specific capabilities across the Total Force, including civil affairs and psychological operations capabilities in the Active Component force.

Key Mechanisms to Institutionalize Irregular Warfare.

- Oversight. The Department's Components have matured their understanding and execution of irregular warfare. While the Department assessed the need to designate a lead component for oversight of institutionalizing irregular warfare, we have determined it is more advantageous to use existing oversight structures and mechanisms for institutionalizing irregular warfare across the joint force rather than create new ones.

- Guidance. Despite gains achieved since the 2006 QDR, the Department has determined efforts to transform capabilities are not uniform across all of its elements. As a result, the Department has finalized a Directive that provides a policy framework and designates responsibilities for irregular warfare. This Directive will help lay the foundation for investments that will continue to build capabilities needed to balance near-term risk and long-term force development goals.

- Component Responsibilities. The Department is revising DOD Directive 5100.1, Functions of the Department of Defense and its Major Components, to incorporate irregular warfare responsibilities.

- Planning Construct. In order to further ingrain irregular warfare key elements into planning for the range of military operations, the Department will assess revisions to its

current campaign planning construct[3] to account for complexities of the environment and incorporate irregular warfare concepts for influencing relevant populations.

Mechanisms to Integrate with Interagency Partners. Meeting challenges of current and future security environments requires the concerted effort of all instruments of U.S. national power. Achieving unity of effort within the U.S. Government is often complicated by organizational "stove-piping," crisis-driven planning, and divergent organizational processes and cultures. These differences have certain benefits, but are not well-suited for addressing the range of irregular challenges that cut across organizational expertise of different U.S. Government entities. Additionally, many interagency processes are oriented toward responding to crises, or surge scenarios, rather than supporting steady-state activities.

A soldier from the 502nd Infantry Regiment, 2nd Brigade Combat Team, 101st Airborne Division speaks with an Iraqi man while visiting a home for the elderly in Kadhimiya, Iraq. Earning the trust of the local population is critical to successful counter-insurgency operations.

Photo by Staff Sergeant Manuel J. Martinez, U.S. Air Force

- The Department will continue to promote and participate in efforts to institutionalize irregular warfare in interagency planning. Initiatives currently underway include development of the Interagency Management System for Reconstruction and Stabilization led by the Department of State Coordinator for Reconstruction and Stabilization, and the National Counter Terrorism Center's efforts to lead interagency steady-state and surge planning for the war on terrorism.

Looking Forward. While significant progress is being made today toward achieving the Department's vision for irregular warfare, there are still challenges to overcome. The Department must continue to address related issues with the interagency outlined in the "Interagency Opportunities" section of this report. With the continued support of Congress, the Department will achieve its objective of ensuring irregular warfare capabilities are firmly integrated into all aspects of the Department's future force.

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[3] The Department's planning construct consists of six phases: Shape; Deter; Seize Initiative; Dominate; Stabilize; and Enable Civil Authority.

B. Cyberspace

Executive Summary. Cyberspace is a decentralized domain characterized by increasing global connectivity, ubiquity, and mobility, where power can be wielded remotely, instantaneously, inexpensively, and anonymously. Amidst the rush of technological advancement, the Department seeks cyberspace capabilities that maintain our freedom of action and that of our allies and partners while ensuring superiority over potential adversaries in militarily-relevant portions of the domain. This environment presents enormous challenges and unprecedented opportunities to forces charged with defending national interests and advancing U.S. policy.

> *The Department's vision is to develop cyberspace capability that provides global situational awareness of cyberspace, U.S. freedom of action in cyberspace, the ability to provide warfighting effects within and through cyberspace, and, when called upon, provide cyberspace support to civil authorities.*

The Department is continuing to transform to meet the challenges of this dynamic domain. As part of the 2009 QRM, the Department set out to define its roles, missions, and objectives in cyberspace through the year 2030. In particular, the 2009 QRM focused on the Department's roles and missions related to:

- Developing capable forces, equipped with requisite skills, training, education, and experience.

- Structuring forces and associated processes and procedures to effectively and efficiently execute Defense Department policies and priorities in cyberspace.

- Employing those forces to achieve desired effects across the full range of military operations.

The Department has determined it is appropriate for each Service to develop capabilities to conduct cyberspace operations. Improvements are needed in training and education to field a professional force, and in command and control for cyberspace operations. Initiatives described in this report represent current Defense Department responsibilities and challenges in this evolving domain. More remains to be done before the Department is able to fully meet its vision. Accordingly, decisions and initiatives reported in this section should be considered as waypoints to chart the Department's progress toward achieving our cyberspace vision.

A U.S. Air Force network systems technician reacquires the Global Broadcast System, which is part of keeping an uninterrupted flow of information streaming to a Combined Air Operations Center.

U.S. Air Force photo by Staff Sergeant Christina Styer, 30th SW
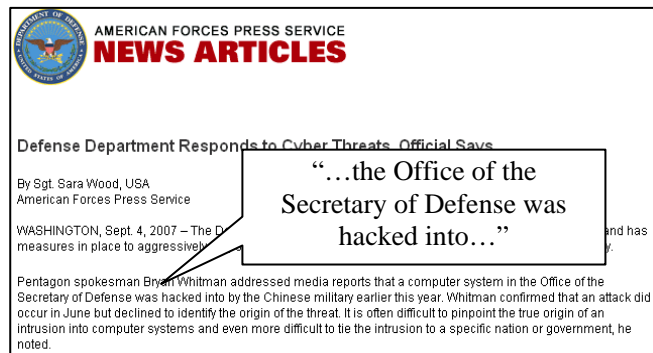
Cyberspace Challenges. Our national security is inextricably linked to the cyberspace domain, where conflict is not limited by geography or time. The expanding use of cyberspace places United States' interests at greater risk from cyber threats and vulnerabilities. Cyber actors can operate globally, within our own borders, and within the borders of our allies and

adversaries. The complexity and amount of activity in this evolving domain make it difficult to detect, interdict, and attribute malicious activities.

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Defense Department Responds to Cyber Threats, Official Says

By Sgt. Sara Wood, USA
American Forces Press Service

WASHINGTON, Sept. 4, 2007 – The D... and has measures in place to aggressively...

Pentagon spokesman Bryan Whitman addressed media reports that a computer system in the Office of the Secretary of Defense was hacked into by the Chinese military earlier this year. Whitman confirmed that an attack did occur in June but declined to identify the origin of the threat. It is often difficult to pinpoint the true origin of an intrusion into computer systems and even more difficult to tie the intrusion to a specific nation or government, he noted.

"…the Office of the Secretary of Defense was hacked into…"

Although cyberspace presents unique challenges to military operations, the Department has made significant progress in defining its roles, missions, and objectives in cyberspace. Additionally, cyberspace offers the U.S. military unprecedented opportunities to shape and control the battlespace to achieve national objectives. Because adversaries operate in the same shared environment, U.S. forces have the ability to use non-kinetic options with new levels of global reach and immediacy against a variety of targets.

Background. The Department has officially defined cyberspace as a global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.

Experience from recent operations and global cyberspace incidents underscore the critical role cyberspace capabilities play in preventing conflict when possible, and supporting full-spectrum military operations when necessary. The Department has made significant progress in operations in support of Combatant Commands and in working cyberspace issues collaboratively within the U.S. Government. Interagency forums allow the Department to leverage authorities in an integrated fashion and to understand equities in the earliest stages of planning. These operations are governed by U.S. domestic and international law. Additionally, our understanding of threats to the Global Information Grid and the development of defensive measures has progressed.

The findings of the 2006 Quadrennial Defense Review and the 2006 *National Military Strategy for Cyberspace Operations* (NMS-CO) laid the groundwork for many areas where the Department has made significant progress on cyberspace challenges.

- The 2006 QDR highlighted the Department's ability to operate effectively in cyberspace as a critical facet of our long-term strategy. The QDR set out several imperatives for the Department, including: capabilities to locate, tag, and track terrorists in cyberspace; capabilities to shape and defend cyberspace; and the strengthening of coordination of defensive and offensive missions in cyberspace across the Department.

- The NMS-CO and associated Implementation Plan provide a comprehensive strategy for the U.S. military to achieve military superiority in cyberspace. Combatant Commanders, Military Departments, Defense Agencies, and other Department Components use the NMS-CO as a reference for planning, resourcing, and executing cyberspace operations.

Outside the Department, we continue to work with other U.S. Government departments and agencies to better delineate roles and missions and enhance the Nation's ability to protect and

advance national security objectives both in cyberspace and using cyberspace tools. The Comprehensive National Cyber Security Initiative (CNCI) provides an important framework for U.S. Government cooperation and division of labor.

Vision. U.S. national power and security depend on our ability to access and use the global commons. As such, the Department seeks the ability to achieve superiority in military-relevant portions of cyberspace. In an environment characterized by uncertainty, complexity, rapid technological change, vulnerability, and minimal barriers to entry, the Department seeks strategic, operational, and tactical cyberspace capabilities that provide:

- U.S. freedom of action in cyberspace, to include freedom from unwanted intrusions and the ability to deny an adversary's freedom of action in cyberspace.

- Global situational awareness of cyberspace.

- The ability to provide warfighting effects within and through the cyberspace domain that are synergistic with effects within other domains.

- The ability, when called upon, to provide cyberspace support to civil authorities.

Decisions and Initiatives. During the QRM, a Cyber Issue Team co-led by the Office of the Under Secretary of Defense for Policy and U.S. Strategic Command addressed cyberspace issues related to developing, structuring, and employing the cyberspace force. To achieve the desired end states of our cyberspace vision, the Department has decided to pursue the following initiatives.

Developing the Cyberspace Force.

- The Department has decided to develop a professional cyberspace force able to influence and execute cyberspace operations with the same rigor and confidence as traditional Department operations in other domains.

- To mature this force, the Defense Department intends to learn from the new, innovative capabilities and experiences of our counterparts across the U.S. Government, in the private sector, and internationally.

- Internally, the Department is changing its Joint Professional Military Education curricula to include more classes and information on cyberspace to improve knowledge of this domain throughout the force and among civilian employees.

- For Computer Network Operations (CNO) specialists, the Department is increasing basic training capacity in the coming years. Our goal is to double the capacity of Department CNO training facilities to 1,000 students per year.

Employing the Cyberspace Force.

- Internally, the Department is establishing adaptable, agile, and responsive organizational structures and processes that ensure resource coherence, integration of core functions, and optimization of cyberspace capabilities, while preserving Services' ability to field tactical CNO elements into their force structure.

- Externally, the Department will continue its robust cooperation with a broad range of cyberspace stakeholders. Consistent with the objectives of preserving U.S. freedom of action in cyberspace and denying an adversary's freedom of action in the domain, the Department seeks to build stronger partnerships with Congress, Federal Government departments and agencies, alliance and coalition partners, industry, academia, and other non-government organizations. Greater integration of cyber policies, operations and activities into exercises, discussions with allies and partners, within the U.S. Government and with industry is necessary to better understand the requirements and effects of military operations in this domain. The Department has much to build on within the framework of the CNCI and from ongoing international efforts.

Partnerships are a vital component to successful cyberspace operations.

Developing Cyberspace Capabilities.

- The Department has determined its acquisition processes for cyberspace capabilities should be more responsive to warfighter requirements. While we have continuously sought to increase capabilities and capacity for achieving effects in and through cyberspace, we will continue to seek new ideas through diverse venues and forums, including combatant commander senior warfighting forums and experimentation, to define future opportunities and develop creative solutions for warfighters' needs.

Looking Forward. In a cyberspace environment of constant change, the Department must continually review its posture. It is clear we cannot accomplish all we desire in this evolving domain without significant assistance from a broad range of partners from academia, industry, and other governments. Collectively, with the support of Congress, the Department will:

- Continually assess emerging threats and existing vulnerabilities.

- Exercise our abilities to anticipate, predict, prevent and respond to cyberspace attacks.

- Build capacity and capability to take advantage of the opportunities and limit challenges inherent to cyberspace.

- Organize ourselves, within the U.S. Government, to defend national interests and advance national policy through cyberspace.

Thanks to a strong basis for private sector, interagency and international cooperation, the

Estonian Minister of Defense Jaak Aaviksoo, left, talks about how he views the threat of cyber terrorism during discussions with Secretary of Defense Robert M. Gates in the Pentagon.

Department's roles and missions in cyberspace will continue to mature. As the U.S., our alliance and coalition partners, and our adversaries learn to employ these capabilities in all phases of collaboration, cooperation, and conflict, we anticipate that the demand for effects in and through cyberspace will grow. This will require corresponding growth of the technical Defense Department workforce, expansion of our scientific and technological capabilities, and potential shifts in our traditional culture. Our approach to cyberspace must remain flexible as our understanding of the domain continues to mature, and as U.S., alliance, coalition partners, and adversary capabilities to operate in cyberspace increase. The Department remains steadfast in our commitment to achieve superiority in the military-relevant portions of cyberspace.

C. Intratheater Airlift

Executive Summary. The 2009 QRM assessed alignment of Service responsibilities for conducting intratheater airlift operations. Airlift operations performed within a theater span the traditional division between "general support," which is normally provided for the joint force by an Air Force component commander through a common-user airlift service, and "direct support" conducted by all Service component commanders employing their Services' organic airlift assets. At the conclusion of the QRM, the Department determined Service responsibilities for intratheater airlift operations are appropriately aligned, and the option that provided the most value

> *The Department's vision is to provide both general and direct support intratheater airlift by maximizing the use of aircraft that have significant multi-use capabilities and are able to alternate between these missions.*

to the joint force was to assign the C-27J to both the Air Force and Army. However, based on lessons learned from recent operations, there are areas for improvement. By changing internal policy, updating doctrine, and maturing concepts of operations to better reflect our intratheater airlift vision, we will improve effectiveness, increase joint synergy and minimize duplication of effort for this mission

Intratheater Airlift Challenges. Responsibilities for the intratheater airlift mission have evolved over time to respond to the changing operating environment and fielding of enhanced capabilities. Most recently, lessons learned from airlift support to Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF) have reshaped our intratheater airlift vision. During the QRM, an Intratheater Airlift Issue Team co-led by the Office of the Under Secretary for Acquisition, Technology, and Logistics, and U.S. Transportation Command addressed all fixed-wing airlifters with significant theater capabilities, including the C-27J Joint Cargo Aircraft being acquired by the Air Force and Army through a joint program.[4] The team's objective was to identify potential changes to responsibilities, policies, doctrine, and concepts of operation to improve effectiveness, address current and future challenges, increase joint synergy, and

Airmen finish signing forms after conducting a preflight inspection on a C-5 at Balad Air Base, Iraq. Strategic airlift aircraft effectively support intratheater movements for OIF and OEF.

minimize duplication of effort between the Services for the intratheater airlift mission.

Background.

General and Direct Support Airlift. Intratheater airlift operations span the traditional division between general support, normally provided by an Air Force component commander using a

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[4]The QRM assessed intratheater airlift operations conducted under Title 10, including Reserve Component forces operating as gained Title 10 forces. Traditional missions that are clearly organic to a Service component were not addressed (i.e., helicopter or small fixed-wing aircraft operations in direct support of a Service component in a "combat zone").

centrally-managed common-user airlift service, and direct support conducted by Service component commanders usually using Service component organic airlift transportation assets (see Figure 3).

Figure 3: General Support and Direct Support Airlift
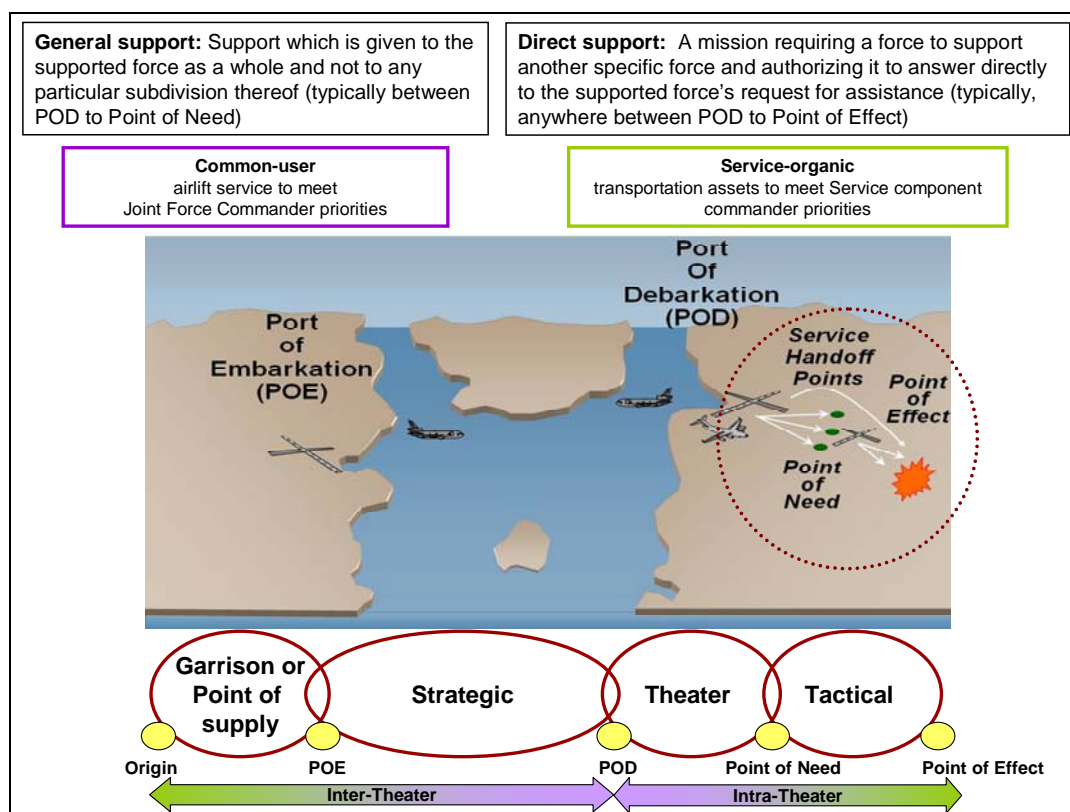
Evolution of Airlift Responsibilities. The Army and Air Force first reached agreement on airlift responsibilities in the early 1950s. A series of memoranda removed restrictions on Army helicopter development and allowed the Army to conduct air operations for transport of Army supplies, equipment, and small units within the combat zone. In 1966, the Army and Air Force agreed the Army should fully develop helicopter capabilities, but barred the Service from major fixed-wing airlift roles. In 1986, another Army-Air Force agreement identified the Army as the executive Service for aircraft in units organic to the land force and employed within the land component's area of operations. The Air Force continued as the executive Service for aircraft that are most effective when organized under centralized control for theater-wide employment. Today, Service responsibilities for intratheater airlift missions generally remain aligned along the tenets of the 1986 agreement, as reaffirmed by an Army and Air Force Joint Cargo Aircraft Memorandum of Agreement signed in 2006.

OIF and OEF Observations. Recent operations in OIF and OEF highlighted three airlift issues of relevance to the QRM:

- The operational agility achieved by using airlift aircraft that alternate between intertheater and intratheater missions is a true transformation in airlift employment

concepts. This flexibility is achieved by improving the visibility of requirements and exploiting previously untapped capacity gained through arrangements with U.S. Transportation Command to support theater airlift operations as needed. This new, combat-tested approach is a model for improving intratheater airlift across the full range of general and direct support operations.

- Increasing distances in a more dispersed and non-contiguous operational environment challenge our ability to supply distributed forces. While this evolving operational environment challenges the capabilities of helicopters to provide direct support to ground forces, the need for direct support remains unchanged. As a result, the Department has determined it must look for new ways to employ time sensitive/mission critical airlift in theater.

- Starting with U.S. Central Command in 2004, the Department has been integrating a Joint Deployment Distribution Operations Center (JDDOC) into every Combatant Command's operating structure to coordinate and synchronize logistical movements and ensure greater effectiveness and efficiency of intratheater airlift operations. A success story from the U.S. Central Command's JDDOC is the ability to meld commercially contracted intratheater airlift options into the mix of airlift capabilities. Commercial contracts/tenders offer a flexible means to quickly expand and reduce capacity to meet the ebb and flow of movement requirements in theater. Commercial contract and tender options range from short-takeoff and landing aircraft for moving small loads and servicing outlying airfields, to large transport aircraft moving palletized cargo and rolling stock. In collaboration with the Air Force, the U.S. Central Command's JDDOC provides the means to manage airlift requirements and funnel demand to military or commercial lift providers based on expected capacity.[5]

Vision for Future Intratheater Airlift Operations. Future joint operations will continue to require robust general and direct support intratheater airlift. The Air Force, through a common-

The first Joint Cargo Aircraft was presented to the U.S. Army on September 25, 2008. The C-27J offers significant utility to provide both general and direct support to warfighters.

user airlift service, will provide intratheater general support, while each Service will provide its own direct support using their "organic" transportation assets. The evolving operational environment, characterized by increasingly distributed operations and longer lines of communication, requires a suitable fixed-wing aircraft for intratheater airlift roles traditionally performed by helicopters. Mission-capable fixed-wing aircraft in a direct support role will complement other airlift assets and allow the entire intratheater airlift fleet to be employed more efficiently. Conducting simultaneous general and direct support missions using a fleet of cross-Service airlift capabilities will

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[5] USTRANSCOM provides the contracting oversight for commercial contracts/tenders to ensure compliance with contracting requirements.

take full advantage of aircraft with significant multi-use capabilities. Some fixed-wing direct support aircraft, like the C-23B Sherpa, have limited payload and range and cannot support common-user airlift operations theater-wide. The C-27J, which is replacing the C-23B, has significantly greater capability and will be employed to maximize the overall utility for the joint force in either role.

Decisions and Initiatives. The QRM Intratheater Airlift assessment determined that Service responsibilities for intratheater airlift capabilities are appropriately aligned. However, there are opportunities to improve effectiveness, increase joint synergy and minimize duplication of effort between the Services for this evolving mission.

Supporting Time Sensitive/Mission Critical (TS/MC) Movement Requirements. The Department has determined theater TS/MC movement requirements will continue to drive a need for Service-organic aircraft to conduct direct support missions. These requirements reflect supported commanders' immediate priorities for delivery of equipment, supplies, and personnel. In support of the QRM, the intratheater airlift issue team created a definition of TS/MC movement requirements (see Glossary) that states dedicated airlift capacity must be available and extremely responsive to meet supported commanders' immediate operational or tactical priorities.

- Accordingly, the Department concludes joint force commander direct support airlift requirements for a theater of operations cannot be routinely satisfied through a common-user airlift service.

Maximizing Use of Today's Airlift Assets. The Department evaluated four options for how intratheater airlift responsibilities could be assigned to the Services. These options ranged from assigning all significant fixed-wing airlift (such as the C-27J) to the Air Force for both general and direct support, to the Army employing all Joint Cargo Aircraft exclusively in direct support of Army forces.

- The Department found the option that provided the most value to the joint force was to assign the C-27J to the Air Force and Army. This will allow all C-27J aircraft to conduct operations identified in the Joint Cargo Aircraft Concept of Operations, with the ability to alternate between either role, regardless of Service alignment, similar to how strategic airlift aircraft alternate from intertheater to intratheater airlift.[6] A challenge to this approach is a need to gain requirement visibility and access to available/allocated airlift capacity.

Increasing Visibility of Airlift Requirements and Capacity. U.S. Transportation Command recently conducted an assessment of organizational options for Operational Support Airlift aircraft, which normally perform organic direct support missions.

- An assessment recommendation accepted by the Department is to employ the Joint Airlift Logistics Information System – Next Generation across all Geographic Combatant

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[6] The Joint Cargo Aircraft Concept of Operations specifies the Air Force provides a common-user pool, while the Army provides Time Sensitive/Mission Critical direct support to Army forces.

Command theaters to standardize the airlift process and gain visibility over direct support requirements and available capacity. Shared visibility and joint oversight maximizes potential use of airlift assets while ensuring they remain under Service component control to meet TS/MC movement needs. Although this effort focuses on improving visibility of Operational Support Airlift operations, expanding it to increase the enterprise-wide visibility of *all* airlift requirements and operations is the Department's desired objective.

Common Deployment and Distribution Control Mechanisms. The Department recognizes the need for improving mechanisms to control deployment and distribution operations at the theater level to maximize airlift potential.

- To meet this need, U.S. Transportation Command, in conjunction with the Services and Geographic Combatant Commanders, is pursuing common supporting capabilities to enhance airlift aircraft employment and data visibility as part of a joint, integrated enterprise. One successful initiative is implementation of the Joint Deployment Distribution Operations Centers within Geographic Combatant Command structures to better integrate and optimize distribution operations.

Operations centers, such as this one in Qatar, enable the flexible use of airlift aircraft to alternate between mission areas. The USCENTCOM Joint Deployment Distribution Operations Center in Kuwait has significantly improved the ability to effectively and efficiently coordinate movement operations.

U.S. Air Force photo by SrA Brian Ferguson

Updating the Joint Cargo Aircraft Concept of Operations. As a result of the QRM, the Air Force, Army, and U.S. Transportation Command are updating the Joint Cargo Aircraft Concept of Operations and revising the Services' Joint Cargo Aircraft Memorandum of Agreement to fully embrace multi-use of the C-27J across traditional Service employment roles. Specifically, the Air Force will make necessary adjustments to ensure the Air Force C-27J can conduct Army direct support missions when requested, and the Army will make certain its C-27J variant can be fully integrated into a common-user airlift system when available/allocated.

Adapting Airlift Policy and Doctrine. Finally, the Department will take action to ensure its airlift vision and need to maximize the utility of intratheater airlift aircraft, including contracted airlift, is addressed through changes to policy and doctrine, including Department of Defense Instruction 4500.43 (*Operational Support Airlift);* Joint Publication 3-17 (*Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations);* and Joint Publication 3-30 (*Command and Control for Joint Air Operations).*

Looking Forward. The 21st Century operational environment demands responsive theater airlift capabilities. The ability to provide a balanced application of airlift across the theater is the key to operational flexibility. Developing common capabilities and processes for sharing movement requirements and accessing airlift capacity provides the means to optimize scarce intratheater airlift assets, and will be a focus in the future. Continuing to bridge traditional boundaries for airlift general support and direct support requires sustaining the ongoing partnership between the Services and Geographic Combatant Commanders, and the support of Congress, to enhance joint operations and maximize warfighter support.

D. Unmanned Aircraft Systems / Intelligence, Surveillance, Reconnaissance

Executive Summary. Persistent reconnaissance and surveillance capabilities provided by Unmanned Aircraft Systems (UAS) have proven invaluable force multipliers in Iraq and Afghanistan. Consequently, the Department has experienced a dramatic increase in operational demand for UAS assets. In response, the Department has significantly increased investment in new Unmanned Aircraft Systems / Intelligence,

> *The Department's vision is to integrate UAS/ISR capabilities seamlessly into the Intelligence Enterprise in support of warfighters and the nation.*

Surveillance, and Reconnaissance (ISR) platforms, sensors, payloads and architectures. Concurrent with growing demand for UAS/ISR systems, the rapidly evolving operational battlespace has led to new and emerging mission sets which present challenges and opportunities for developing, acquiring, and employing UAS/ISR capabilities.

The Department has determined it is appropriate for each Service to develop, acquire, and

U.S. Army photo by Sgt. Amanda Jackson

An Army infantryman with 82nd Airborne Division at Fort Bragg NC prepares to launch a RQ-11 Raven UAS into the air. The Raven is a Group 1 UAS (see Glossary for UAS category description). UAS are employed at all echelons of command to meet reconnaissance, surveillance, and target acquisition needs.

operate unmanned aircraft systems, while developing and implementing improvements to increase jointness and interoperability of UAS/ISR capabilities. During the QRM, a UAS/ISR issue team, co-led by the Under Secretary of Defense for Intelligence and U.S. Strategic Command, developed steps to address challenges associated with UAS/ISR planning and direction; Tasking, Processing, Exploitation, and Dissemination (TPED); data standards and interoperability; communications architecture; and airspace access. These initiatives, which address improvements in oversight, integration, and interoperability of UAS/ISR capabilities, will collectively achieve significant increases in the Department's warfighting effectiveness.

UAS/ISR Challenges. Warfighter demand for UAS/ISR capabilities has increased exponentially over the past several years, due in large part to the unique operational needs of ongoing irregular warfare operations in Iraq and Afghanistan. These operations often require General Purpose Forces and Special Operations Forces operating in tandem to find and track mobile, elusive and fleeting targets, rather than traditional imaging of fixed, structural targets. Given their ability to provide a persistent aerial reconnaissance and surveillance capability against these highly perishable targets, UAS are increasingly tasked to support irregular warfare missions. UAS have surpassed 500,000 flight hours supporting operations in Iraq and Afghanistan alone. The

Growth in UAS Investment

Deployed UAS

Number of UAS

8000
6000
4000
2000
0

2002   2008
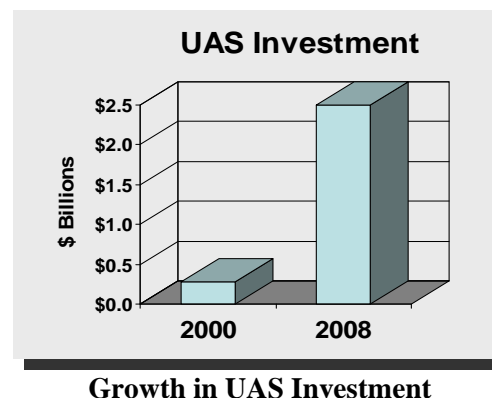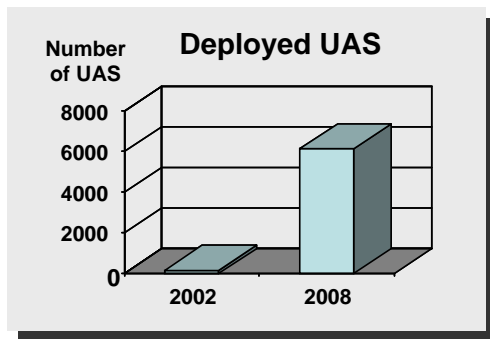
Growth in UAS Deployments

significant increase in demand for UAS/ISR capabilities is also driven by our military's ability and need to engage targets with high precision around the globe. The Department continues to progress toward meeting increased demand for UAS/ISR capabilities. For example, the number of deployed UAS has increased from approximately 167 aircraft in 2002 to over 6,000 in 2008, while defense investment in UAS capabilities has dramatically grown from $284 million in Fiscal Year 2000 to $2.5 billion in Fiscal Year 2008. While it is clear warfighters un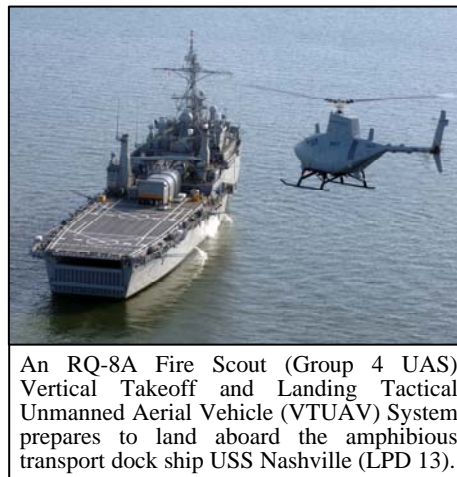derstand the essential capabilities UAS deliver to the fight, it is also clear that new missions and future applications present long-term challenges and opportunities for the development, acquisition and employment of these critical systems.

UAS/ISR Vision. The future vision for UAS/ISR capabilities is in concert with the 2008 *Defense Intelligence Strategy*, which calls for a fully and seamlessly integrated Intelligence Enterprise. To achieve this vision, UAS/ISR capabilities must be developed, acquired, and operated in a manner which allows full integration of collected intelligence from the tactical to national levels. The Department will continue to provide direction and advocacy to coordinate UAS/ISR development and acquisition across the Services, Combat Support Agencies, Combatant Commands, and our interagency partners. Future UAS/ISR capability enhancements will focus on increasing aircraft performance and improving communications, data links, and weapon and sensor payloads.

Decisions and Initiatives. The Department has determined the following initiatives hold the most potential for significantly enhancing warfighting effectiveness and avoiding unnecessary duplication of effort.

Planning and Direction for ISR Support to Warfighters. The Defense Department has well-established processes for determining joint force priorities. However, the highly dynamic environment of current operations in Afghanistan and Iraq, along with other new and emerging requirements, have stressed our ability to plan for and provide sufficient UAS/ISR capabilities. Recognizing this, the Department has developed new, more responsive oversight, guidance development, and planning structures and processes. These changes will help the Department better define joint UAS/ISR priorities and integrate multi-mission capable UAS/ISR collection, processing, exploitation, analyses and dissemination activities.

An RQ-8A Fire Scout (Group 4 UAS) Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV) System prepares to land aboard the amphibious transport dock ship USS Nashville (LPD 13).

U.S. Navy photo by Kurt Lengfield

- In concert with the Department's Joint Capability Integration and Development System, the Battlespace Awareness Capability Portfolio Management process identifies and mitigates ISR capability gaps. Leveraging these processes, the Under Secretary of Defense for Intelligence and U.S. Strategic Command, as the warfighters' ISR

proponents, work together to champion resources needed to meet Combatant Commanders' UAS/ISR priorities.

- The Deputy Secretary of Defense has directed the Undersecretary of Defense for Acquisition, Technology and Logistics to lead a UAS Task Force to develop initiatives that will enhance operations, enable interdependencies across the Department's Components, and streamline UAS acquisition. Additionally, the Department chartered the U.S. Joint Forces Command Joint UAS Center of Excellence to support Combatant Commanders and Military Departments by facilitating development and integration of common UAS operating standards, capabilities, doctrine and training.

A fully armed MQ-9 Reaper (Group 5 UAS) taxis before a mission in Afghanistan. The MQ-9 Reaper provides persistent surveillance and target engagement capabilities to warfighters in Iraq and Afghanistan.

*U.S. Air Force photo by Staff Sergeant Brian Ferguson*

- A Department of Defense ISR Task Force is focused on leveraging all elements of the Intelligence Community to rapidly acquire and deploy ISR assets in support of U.S. Special Operations Command and U.S. Central Command operations in Iraq and Afghanistan. The ISR Task Force is integrating ISR and strike capabilities while working toward mainstreaming and institutionalizing UAS/ISR related processes in the Department's Planning, Programming, Budgeting, and Execution cycle.

- U.S. Strategic Command is leading efforts to develop an ISR Force Sizing Construct for the Department. This initiative will develop a sound analytical foundation for future ISR allocation and procurement decisions.

- The Department has completed a Persistent ISR Joint Capabilities Document which identifies needed improvements to provide joint force commanders with more effective capabilities. The two highest priority capability gaps identified are attaining broad visibility and traceability throughout the intelligence collection, analysis, and distribution process, and improving multi-intelligence collection strategies in support of joint force commanders.

- In October 2007, the Department took a major step toward improving the Defense ISR Operations Enterprise by integrating functions performed by U.S. Strategic Command's Joint Functional Component Command for ISR and the Defense Joint Intelligence Operations Center to form the Defense Intelligence Operations Coordination Center (DIOCC). The DIOCC is responsible for validating, recommending priorities, and registering defense intelligence collection requirements, including UAS/ISR requirements, with the Intelligence Community. As the DIOCC continues to mature, its alignment with the National Intelligence Coordination Center will improve their rapid synchronization and timely operational support to Combatant Commanders.

Tasking, Processing, Exploitation, and Dissemination (TPED). TPED comprises the people, processes, and systems that transform collected data into operationally executable intelligence.

TPED enables warfighters to request collection and intelligence products tailored to meet their operational needs. TPED is vital to the effectiveness of any ISR system, and TPED implications must be considered when planning UAS acquisition and employment. Currently, requirements for UAS-derived actionable intelligence outpace TPED capacity, and future projections suggest this mismatch will continue temporarily. Over time, multiple TPED processes have been created to support UAS operations. Furthermore, the breadth of current and emerging UAS/ISR missions have caused TPED processes and systems associated with each intelligence discipline (signals, imaging, etc.) to differ across the Services, Combat Support Agencies, and from national to tactical assets and applications. As a result, the Department's ability to accurately define TPED mission needs has not kept pace with the rapid development and employment of UAS/ISR capabilities. Accordingly:
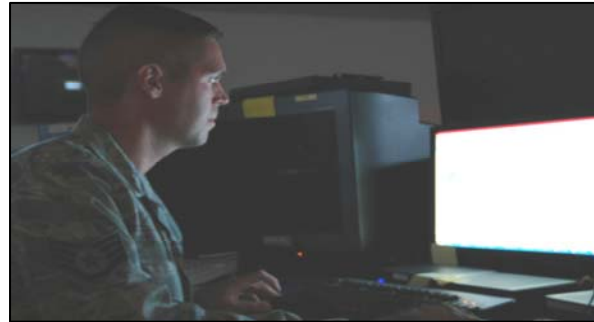
An imagery analyst at Langley Air Force Base, Virginia reviews previous damage assessments from Hurricane Katrina between contingency taskings from U.S. Central Command. Reach-back exploitation analysts provide tailored intelligence products to customers including SOF and domestic disaster relief agencies.

- The Department is leading a comprehensive effort to redefine TPED in order to enable Services and Combat Support Agencies to develop and operate the various TPED systems using common standards and rule sets. The Joint Staff, as part of the ISR Task Force, is addressing TPED issues and concerns across the Services, including capacity, manpower, storage requirements, technology, and exploitation/dissemination timeliness. The U.S. Joint Forces Command Joint UAS Center of Excellence will work with the Joint Staff and the Office of the Under Secretary of Defense for Intelligence to review UAS TPED-related tasks to establish basic training qualifications, standards, and objectives. Ultimately, the Department will establish a community-wide definition of TPED to support development of concept of operations, joint doctrine, and capability requirements documentation.

- The Under Secretary of Defense for Intelligence, in coordination with the Services, is sponsoring an annual Empire Challenge capability demonstration that provides a venue for UAS, ground station and TPED interoperability assessment. Empire Challenge provides a key opportunity to identify and correct interoperability issues uncovered during this month long series of test events.

Data Standards and Platform Interoperability. As Services and Defense Agencies develop UAS/ISR capabilities, collected data formats and transmission protocols must be standardized to ensure UAS/ISR platforms become truly interoperable with joint and service TPED architectures. Effective sensor data and metadata formats and standards will promote interoperability between the databases and ground stations—such as the Distributed Common Ground System—used by Combat Support Agencies, Services, Intelligence Community, and interagency partners. These systems are crucial to sharing data from national to tactical levels of operation.

- The Under Secretary of Defense for Acquisition, Technology, and Logistics, in concert with the Joint Chiefs of Staff, is developing a joint acquisition approach to satisfy warfighter requirements. This approach will capture the benefits of standardized platforms, communications and logistics.

- The Under Secretary of Defense for Intelligence, in conjunction with the Joint Chiefs of Staff and UAS Task Force, is addressing the need for a Joint Capabilities Document for UAS Interoperability to resolve UAS/ISR interoperability issues. This document will create the foundation that will lead to identification of information and communications architectures, sensor data and interoperability standards and provide a link to a Joint UAS Concept of Operations.

Communications Architecture. UAS/ISR relies heavily on communications to command and control aircraft and sensors for disseminating collected data. As the number of deployed UAS increase, more communication links, bandwidth and spectrum, and protected communications paths are required. Meeting the resultant frequency spectrum demand is a significant challenge. Furthermore, to meet increased warfighter demands for ISR support, the Services have developed methods for employing UAS tailored to their individual operating environments. However, one Service's methods may not be consistent with other Service or joint communications architectures. While Service-

Airmen prepare to land an MQ-1 Predator (Group 4 UAS) at Ali AB Iraq. UAS/ISR operations rely upon robust communications architectures for command, control, and data dissemination.

U.S. Air Force photo by Airman 1st Class Christopher Griffin

specific methods have delivered capability to warfighters, a more comprehensive approach will ensure communication demands are better managed to improve interoperability and cross-Service support, especially when satellite support is constrained or not possible. Accordingly:

- The UAS Task Force has identified the need to: (1) ensure effective spectrum planning and guidelines are incorporated into all UAS development efforts; and (2) Service and joint oversight verify compliance with these guidelines.

- The Department is expanding its Airborne Intelligence Surveillance and Reconnaissance Model to include all those entities requiring connection to the communications architecture. This change will better enable the Department to model and plan for dynamic communications architecture requirements.

Airspace Access for Operational and Training Missions. Combat effectiveness of our joint warfighters requires UAS to operate safely, efficiently, and have readily-available access to the National Airspace System. By 2013, the Services estimate they will require over one million flight hours for UAS operational and training missions. Due to high mission demands and limited restricted airspace availability, the majority of UAS flight hours will be accomplished outside of restricted airspace. Accordingly, the Department is seeking to better define technological, procedural, and standardized training qualifications to ensure UAS have access to appropriate classes of airspace to fulfill Service and national needs. This effort will require a

concerted approach by the Department working alongside federal, state and civilian organizations. In support of this objective:

- The UAS Task Force is developing an 18 month plan that focuses on alleviating flight restrictions for all classes of UAS and supports near-term Service operational and training requirements in the National Airspace System.

An RQ-4 Global Hawk (Group 5 UAS) unmanned aerial vehicle is towed back to its hangar following a mission at a deployed location in Southwest Asia. The Global Hawk requires access to all classes of airspace for the conduct of operational and training missions.

- U.S. Joint Forces Command Joint UAS Center of Excellence is leading a coordinated review of current and future Department UAS airspace access requirements for all classes of UAS, and leading a Service review to develop a minimum set of UAS pilot/operator qualification requirements and/or standards to operate in the National Airspace System.

- U.S. Joint Forces Command Joint UAS Center of Excellence has identified three areas necessary to ensure access to applicable classes of the National Airspace System: (1) Airworthiness Certification; (2) establishment of standardized basic UAS qualifications consistent with Federal Aviation Administration guidelines for each class of airspace; and (3) development of sense and avoid technology. Working with the Services, the U.S. Joint Forces Command Joint UAS Center of Excellence will ensure these areas are addressed during UAS development.

Looking Forward. Capabilities provided by UAS are essential to today's warfighters. With newly emerging UAS missions and still-maturing ISR applications, the Department is

An RQ-7B Shadow (Group 3 UAS) begins its landing sequence following a flight to provide troops operating in Iraq with another set of eyes. Shadows are employed by the Marine Corps and Army.

aggressively pursuing opportunities to improve development, acquisition and employment of UAS. The Department's vision of seamlessly integrating UAS/ISR capabilities into the Intelligence Enterprise requires developing interagency and Congressional partnerships to increase airspace access and improve communications connectivity around the globe. Additionally, the Defense Department must better integrate its capabilities with growing UAS efforts of other federal agencies and partner nations. With the support of the Congress, the Department will continue to appropriately resource UAS platforms and associated TPED support to meet growing warfighter demand for ISR capabilities.

V. The Road Ahead: Interagency Opportunities

Today's complex security environment places increased demands on the capabilities and resources of departments and agencies across the U.S. Government. Individually, departments and agencies are not as effective as when we unify our actions toward achieving a common vision. The Department strongly supports initiatives to increase unity of effort across the government for addressing our common national security problems. While significant progress toward this end has

> *The Department's vision is to support maturation of whole-of-government approaches to national security problems. Solutions to address strategic and operational security challenges will be based on employing integrated flexible, mutually-supporting interagency capabilities.*

been made over the past five years, continued improvement requires a sustained focus on developing whole-of-government strategies and plans, as well as addressing operational seams between military and civilian agencies. During the QRM, the Department explored interagency issues and problems associated with key national security challenges, including cooperative security, stability operations, irregular warfare, and homeland defense and civil support. While these activities are core mission areas for the Department, they require substantial military and civilian interaction. QRM results affirm our need to continue to strongly support initiatives to build a cohesive, whole-of-government approach to our Nation's enduring security challenges.

Vision. The Department supports institutionalizing whole-of-government approaches to addressing national security challenges. The desired end state is for U.S. Government national security partners to develop plans and conduct operations from a shared perspective. Toward this end, the Department will continue to work with its interagency partners to plan, organize, train, and employ integrated, mutually-supporting capabilities to achieve unified action at home and abroad.

An Afghan engineer talks with a member of the Nangarhar Provincial Reconstruction Team at a metal working shop in the Nangarhar province of Afghanistan. The team assesses community needs and builds schools, government centers, roads, medical facilities and basic infrastructure throughout the area.

Photo by Staff Sergeant Joshua T. Jasper, U.S. Air Force

- An essential element of this vision is establishing a coherent framework for developing whole-of-government approaches for addressing national security challenges. A framework that includes commonly understood strategic concepts, operational principles, relationships between agencies, and roles and responsibilities would help delineate how to best coordinate and synchronize efforts as well as transition between military-led and civilian-led activities during operations.

- As proposed by the 2006 QDR, whole-of-government national security planning would be facilitated by publishing an authoritative national-level strategic guidance document that addresses interagency roles and responsibilities, resolves seam issues between agencies, and establishes priorities for planning and development of each organization's capabilities.

- Perhaps the most important critical element of this vision is the human dimension – developing a federal workforce trained and educated in a manner that fosters mutual understanding across agencies, expands knowledge of other agencies' roles and missions, and increases opportunities for building relationships across the Federal Government as well as with state and local governments.

Initiatives. As summarized throughout this report, the Department is pursuing initiatives to address our internal roles and missions issues. However, QRM results also reinforce the need for the Department to continue to work with our national security partners on complex roles and missions seam issues. To advance whole-of-government solutions, the Department strongly supports the following initiatives.

<u>Strategic and Operational Planning</u>. Several ongoing initiatives will improve how the interagency conducts national level planning.

- The Department of Defense and Department of State, in coordination with other agencies, are building an interagency planning framework to provide a prevention, response, and contingency capability to address foreign states at risk or in the process of instability, collapse, or post-conflict recovery.

    o This initiative to develop a whole-of-government planning approach and supporting tools are the result of National Security Presidential Directive 44 (and is now authorized under Title XVI of the 2009 National Defense Authorization Act). Led by the Department of State's Coordinator for Reconstruction and Stabilization, this planning framework is supported by the Interagency Management System (IMS), which provides a structure for civilian planning

A Civil Affair unit member with the Parwan Provincial Reconstruction Team (PRT) hands out toys at a school opening in Kabul, Afghanistan.

U.S. Army photo by Spc. Thomas Bray

    and implementation of reconstruction and stabilization activities at the strategic, operational, and tactical level. The IMS structure is also built to interface and integrate with existing military organizations when necessary. The capacity for the IMS is provided by the Department of State's as yet fully implemented or funded Civilian Stabilization Initiative, of which the Civilian Response Corps was recently partially funded via supplemental appropriation.

- The Department is working with the U.S. Agency for International Development to improve collaboration, coordination, and synchronization of existing foreign-based strategic guidance and operational plans to take advantage of lessons learned from recent operations. The newly published U.S. Agency for International Development "Civil-Military Cooperation Policy," which calls for improved coordination with the military, demonstrates significant potential. The Department of Defense will continue to support this positive step towards creation of mutually supportive development-based and military-based plans.

- For homeland security, the Departments of Defense and Homeland Security are establishing a pilot Task Force for Emergency Readiness consisting of a small group of interagency planners to develop plans that ensure a whole-of-government response to disasters. The task force will integrate local, state, and federal organizations, as well as the private sector. The pilot task force will begin in five states within the next calendar year.

- At the national level, the Department supports development of a whole-of-government strategic planning document that outlines national objectives, priorities and specific actions for improving interagency coordination and operational planning.

Concept Development. Over the last several years, the Department has developed Joint Operating Concepts that propose future interagency activities, including concepts for cooperative security, irregular warfare, stability operations and homeland defense and civil support. These JOCs were developed in informal collaboration with the Department of State and other agencies. Although they incorporate a broader interagency perspective than previous Department-centric documents, there are opportunities for continued improvement, to include conducting comprehensive whole-of-government capability and capacity gap analyses across all lines of operation.

- The Department of Defense advocates establishing a formal forum for collaborating with other elements of the U.S. Government on Joint Operating Concepts. The objective is to continue to evolve JOCs into truly whole-of-government concepts that would better define responsibilities across the whole-of-government, such as border security, disaster relief operations abroad, and domestic counterterrorism security programs, among other shared security challenges.

Authorities and Resources. Fiscal Year 2006 National Defense Authorization Act Section 1206 "Global Train and Equip" and Section 1207 "Security and Stabilization Assistance" authorities have proven highly effective at combining assets to address urgent national security problems. These programs recognize the need to augment, not supplant, what other agencies can bring to the table – particularly the Department of State and U.S. Agency for International Development – with Defense Department capabilities that address mutual needs in the field.

A member of the U.S. Navy amphibious assault ship USS Kearsarge (LHD 3) provides medical care during hurricane relief operations in Haiti. The Department of Defense advocates expanding whole-of-government collaboration on concepts such as disaster relief operations abroad.

U.S. Navy photo by Mass Communication Specialist 2nd Class Jilleanne Buda/Released

- Internally, the Department will continue developing capabilities for stabilization, reconstruction, foreign internal defense, and counterinsurgency operations supported by force growth initiatives, new doctrine, operational concepts, adjusting roles of the civilian work force, and enhancing training and education.

- Externally, the Department will continue to collaborate with the Congress and Department of State to explore new authorities that would better integrate capabilities and funding priorities for these shared missions.

- The Department of Defense strongly supports the State Department's Civilian Stabilization Initiative budget request to continue development of expeditionary civilian capabilities in eight U.S. Government departments and agencies.

Interagency Secure Communications Challenges. While all agencies can communicate on unclassified networks, not all agencies and departments required to plan and conduct operations together are able to communicate with each other on classified networks. For example, information sharing between Federal Government departments and local/state entities involved with homeland security is predominately over unclassified networks. Similarly, information sharing concerning other threats, emergency and disaster management, planning, and other domestic security and response is underdeveloped.

- In cooperation with its interagency partners, the Department will continue to aggressively pursue solutions that ensure it can communicate over classified networks with critical domestic partners.

National Security Professional Development. Many lingering challenges between interagency staffs may be partially attributable to a lack of understanding and appreciation of each others' organizational cultures, priorities, requirements, and practices. Traditionally, civil servants and military members have few formal opportunities for interagency training, education, and professional development. Beyond rudimentary familiarization at staff courses, personnel systems have not typically encouraged professional development that fosters a deep understanding of other agencies. In 2007, the President directed the creation of a "National Security Professional Development" system to address these cross-agency challenges.

- In support of national security professional development, the Department is working proactively with its partners to provide more students from other agencies access to courses at Defense Department educational institutions, notably the National Defense University.

Future Opportunities.

Conducting Stabilization and Reconstruction Operations. Today, military forces are conducting a wide range of civil-military operations and activities, including security and policing assistance, humanitarian relief, reconstruction, governance, civil capacity building, medical and security cooperation. Hardly new to the Department, military forces have performed these missions for more than a century and likely will continue to do so in the future. However, recent operations have exposed gaps between civilian and military capabilities, and highlighted a need to develop a better understanding of how civilian-military efforts must be mutually supportive and when operations should transition between military-led and civilian-led activities. National Security Presidential Directive (NSPD) 44 *"Management of Interagency Efforts Concerning Reconstruction and Stabilization"* and Title XVI of the 2009 National Defense Authorization

Act have made a substantial first step in building interagency capabilities and conducting strategic and operational planning.

- While NSPD-44 and Title 16 of the 2009 National Defense Authorization Act broadly define responsibilities of various departments during foreign stabilization and reconstruction operations, full realization of the ongoing capabilities development for these types of operations will not be realized without full funding of the Civilian Stabilization Initiative.

Resources to Increase Civilian Expertise. Lessons learned in recent operations stress the critical need to further develop deployable civilian expertise for conducting stabilization, reconstruction, and counterinsurgency operations. Today, civil agencies and departments have insufficient resources for carrying out missions associated with transition from violence to lasting stability.

- Accordingly, the Department supports establishing a better balance between the civil and military instruments of national power by significantly increasing resources needed for governance, strategic communication, security assistance, civic action, and economic reconstruction and development.

Strategic Communication. The Department of Defense recognizes strategic communication as a process through which information activities (including public affairs, psychological operations, information operations, public diplomacy, and policy) are harmonized and synchronized with other operations. The Department will continue to improve the alignment of actions and information with policy objectives to integrate strategic communication into defense missions and to support larger U.S. policies as well as the State Department's public diplomacy priorities.

- The Department has significant capabilities and resources to support strategic communication priorities, particularly to counter ideological support to terrorism in Iraq and Afghanistan. We are committed to using our operational and informational activities and strategic communication processes in support of the Department of State's broader public diplomacy efforts. This cooperation will better enable the U.S. Government to engage foreign audiences holistically and with unity of effort.

- The Department of Defense and Department of State will expand our partnership to conduct strategic communication planning in support of the Global War on Terror, building partnership capacity, and regional issues. This partnership encompasses the full range of information and Theater Security Cooperation activities to synchronize efforts; improve regional and cultural expertise; develop and deliver information products; and train international partners to build their information networks.

Authorities and Oversight. Funding and authorities dedicated solely to individual agencies may not be sufficient to ensure that the activities of multiple agencies are fully integrated and that all seam issues between organizations are addressed. "Stovepiped" funding and authorities could have the unintended effect of encouraging the development of uncoordinated approaches to national security challenges as well as unneeded competition between departments and agencies.

- The Department recognizes the need for authorities and approaches to funding for whole-of-government operations.

Looking Forward. In summary, the Department of Defense places a high priority on integrating whole-of-government capabilities to deal with shared challenges to our Nation's security. Future conflict will require integrated planning and implementation efforts as well as smooth transitions between our military forces and civilian counterparts, not just to win wars, but to prevent them and mitigate the underlying causes of conflicts and instability. In order to plan and execute essential national security tasks at home and abroad, we seek to increase defense and civil support and building partnership capacity in addition to fielding fully-ready joint forces. Since our Nation's future security depends equally on interagency cooperation, coordination, and integration efforts, building unity of effort requires us to expand the concept of jointness beyond the Department of Defense. To help establish the right balance between our Nation's capabilities, we strongly support increasing resources and capacities in other departments and agencies, notably the Department of State and the U.S. Agency for International Development.

A Coast Guard Petty Officer from Winthrop, MA mans a M-240 machine gun aboard a rigid hull inflatable boat as the conventionally-powered aircraft carrier USS John F. Kennedy (CV 67) moves into port.

U.S. Coast Guard photo by Public Affairs Specialist 3rd Class Lisa Hennings

GLOSSARY

The following information on specific concepts, processes, and definitions supplement text in the Quadrennial Roles and Missions Review Issue Team sections.

A. Irregular Warfare Key Terms and Concepts

- **Counterinsurgency (COIN):** Those military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency.

- **Counter-terrorism (CT):** Operations that include the offensive measures taken to prevent, deter, preempt, and respond to terrorism.

- **Foreign Internal Defense (FID):** Participation by civilian and military agencies of a government in any of the action programs taken by another government or other designated organization to free and protect its society from subversion, lawlessness, and insurgency.

- **General Purpose Forces (GPF):** All forces except Special Operations and Strategic Forces. General Purpose Forces are not limited to any one domain (i.e., General Purpose Forces are not only ground forces).

- **Irregular Warfare:** A violent struggle among state and non-state actors for legitimacy and influence over the relevant populations. Irregular warfare favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities, in order to erode an adversary's power, influence, and will.

- **Special Operations Forces (SOF):** Those Active and Reserve Component forces of the Military Services designated by the Secretary of Defense and specifically organized, trained, and equipped to conduct and support special operations.

- **Stability Operations:** An overarching term encompassing various military missions, tasks, and activities conducted outside the United States in coordination with other instruments of national power to maintain or reestablish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief.

- **Unconventional Warfare (UW):** A broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted through, with, or by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes, but is not limited to, guerrilla warfare, subversion, sabotage, intelligence activities, and unconventional assisted recovery.

B. Cyber Key Terms and Concepts

- **Cyberspace:** A global domain within the information environment consisting of the interdependent network of information technology, infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.

- **Global Information Grid (GIG):** The globally interconnected, end-to-end set of information capabilities, associated processes and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers, and support personnel. The Global Information Grid includes owned and leased communications and computing systems and services, software (including applications), data, security services, other associated services and National Security Systems.

C. Intratheater Airlift Key Terms and Concepts

- **Time Sensitive / Mission Critical (TS/MC) Movement Requirements:** Justification for organic transportation assets to conduct direct support mission are based on need to satisfy TS/MC requirements. TS/MC requirements create a demand for delivery of equipment, supplies, and personnel that are generally non-routine in nature and must be delivered to the point of need or point of effect in an accelerated time period. These demands require the lift capacity to be supremely responsive to the supported commander's immediate operational or tactical priorities. TS/MC demands cannot routinely be accommodated via planned resupply and movement processes where efficiency is the primary consideration. (Note: Although no specific response time is specified, depending on the operational scenario and unit mission, TS/MC movement requirements are usually conducted with less than 24 hours notice.)

- **Point of Need:** A physical location designated by the JFC as a receiving point for forces or commodities, for subsequent employment, emplacement, or consumption.

- **Point of Effect:** A physical location designated by the functional component commander, Service component commander or a subordinate commander to support operations normally within the combat zone.

- **Port of Debarkation (POD):** The geographical point at which cargo or personnel are discharged. This may be a seaport or aerial port of debarkation; for unit requirements; it may or may not coincide with the destination.

- **Port of Embarkation (POE):** The geographic point in a routing scheme from which cargo or personnel depart. This may be a seaport or aerial port from which personnel and equipment flow to a port of debarkation; for unit and non-unit requirements, it may or may not coincide with the origin.

D. Unmanned Aircraft Systems / Intelligence, Surveillance, Reconnaissance Key Terms and Concepts

- **Command and Control:** The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called C2.

- **Unmanned Aircraft System (UAS):** The system, whose components include the necessary equipment, data communication links, and personnel to control and employ an unmanned aircraft. The unmanned aircraft system is composed of six components: the aircraft, payloads, data communication links, ground control stations, ground support equipment, and ground operators.

- **JUAS Categories:** A classification system for current UAS based primarily on a categorization schema that groups UAS according to three enduring attributes: UA weight, normal operating altitude, and speed.

    o **Group 1 UAS.** UAS typically less than 20 pounds in weight and normally operate below 1,200 feet Above Ground Level at speeds less than 250 knots

    o **Group 2 UAS.** UAS in the 21 – 55 pound weight class and normally operate less than 3,500 feet Above Ground Level at speed less than 250 knots.

    o **Group 3 UAS.** UAS weigh more than 55 pounds, but less than 1320 pounds. They normally operate below 18,000 feet Mean Sea Level at speeds less than 250 knots.

    o **Group 4 UAS.** UAS weigh more than 1,320 pounds and normally operate below 18,000 feet Mean Sea Level at any speed.

    o **Group 5 UAS.** UAS weight more than 1,320 pounds and normally operate higher than 18,000 feet Mean Sea Level at any speed.

E. Interagency Opportunities Key Terms and Concepts

- **Strategic Communication:** Focused U.S. Government processes and efforts to understand and engage key audiences to create, strengthen or preserve conditions favorable to advance national interests and objectives through the use of coordinated information, themes, plans, programs, and actions synchronized with other elements of national power.

QRM